Database design document:  
  
1. OccupationRating

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| **Column Name** | **Data Type** | **Constraints / Description** |
| OccupationRatingId | INT | Primary Key |
| RatingName | VARCHAR(50) | NOT NULL, e.g. Professional, Light Manual |
| Factor | DECIMAL(8,4) | NOT NULL, e.g. 1.5000 (used in premium formula) |

2. Occupation

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Constraints / Description** |
| OccupationId | INT | Primary Key |
| OccupationName | VARCHAR(100) | NOT NULL, e.g. Doctor, Cleaner |
| OccupationRatingId | INT | Foreign Key → OccupationRating.OccupationRatingId, NOT NULL |

3. Member

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Constraints / Description** |
| MemberId | BIGINT | Primary Key |
| FullName | VARCHAR(200) | NOT NULL, e.g. John Doe |
| DateOfBirth | DATE | NOT NULL, (store as YYYY-MM-01 if only mm/YYYY provided) |
| AgeNextBirthday | INT | NOT NULL |
| UsualOccupationId | INT | Foreign Key → Occupation.OccupationId, NOT NULL |

4. PremiumCalculation

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Constraints / Description** |
| **PremiumCalculationId** | BIGINT | **Primary Key** |
| **MemberId** | BIGINT | **Foreign Key → Member.MemberId**, **NOT NULL** |
| **OccupationId** | INT | **Foreign Key → Occupation.OccupationId**, **NOT NULL** |
| **AgeNextBirthday** | INT | **NOT NULL** |
| **DateOfBirth** | DATE | **NOT NULL** |
| **DeathSumInsured** | DECIMAL(18,2) | **NOT NULL** |
| **OccupationFactor** | DECIMAL(8,4) | **NOT NULL**, snapshot of factor used in formula |
| **CalculatedMonthlyPremium** | DECIMAL(18,2) | **NOT NULL**, result of formula calculation |
| **CalculatedAt** | DATETIME | **NOT NULL**, default = current timestamp |